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EXAMINER
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BARTLEY, KENNETH

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3693

NOTIFICATION DATE	DELIVERY MODE
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09/02/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

eofficemonitor@woodcock.com



Continuation of Disposition of Claims: Claims pending in the application are 165-170, 183-224, 237-278, and 291-326.

Continuation of Disposition of Claims: Claims rejected are 165-170, 183-224, 237-278, and 291-326.

### **DETAILED ACTION**

1. Receipt of Applicant's amendment filed 06/06/2011 is acknowledged.

#### ***Response to Amendment***

2. Claims 165, 169, 204-207, 209, 219, 223, 258-261, 263, 273, 277, 293, 312-315, and 317 have been amended. Claims 171-182, 225-236, 279-290, 328-330, 333-335, 338-340, 343-345, 348-350, 353-355, 358-360, 363-365, and 368-370 have been withdrawn. Claims 1-164, 327, 331, 332, 336, 337, 341, 342, 346, 347, 351, 352, 356, 357, 361, 362, 366, 367, and 371 have been canceled. It is unclear whether claims 218, 272, and 326 are amended or not. Claims 165-170, 183-224, 237-278, and 291-326, are pending and are provided to be examined upon their merits.

#### ***Allowable Subject Matter***

3. Claims 165-170, 183-224, 237-278, and 291-326, would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. §101 and 35 U.S.C. §112, 2nd paragraph, set forth in this Office action.

#### ***Response to Arguments***

4. Applicant's arguments see pp. 95-112, filed 06/06/2011, with respect to claims 165-170, 183-224, 237-278, and 291-326 have been fully considered and are persuasive. The 35 USC 103(a) prior art rejection of claims 165-170, 183-224, 237-

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278, and 291-326 has been withdrawn. A response is provided below in **bold** to

Remarks filed where appropriate.

**Applicant argues claim objections, pg. 90 or Remarks:**

Claim Objections

The Office states that claims 209, 263 and 317 need to be indented. Official Action, at 34. The Applicant has amended these claims with indentations, and requests that the Office

**Withdrawn.**

**Applicant argues 35 USC § 101, rejection, starting pg. 90 of Remarks:**

Claim Rejections - 35 USC § 101

Claims 165-170 and 183-218 stand rejected under 35 USC § 101 because the Office states that the claimed invention is directed to non-statutory subject matter. Official Action, at 34. Specifically, the Office states

In the case of claims 165 and 209 of the instant application, step (d) of claim 165 and step (i) of claim 209 are treated as insignificant in 101 analysis since these steps are storing a result even if such process is carried out via a machine. On the other hand steps (a)-(e) of claim 165 and steps (a)-(i) of claim 209 may be performed by a human mind yielding subjective and unpredictable result and therefore directed to an abstract idea.

Official Action, at 36. The Applicant have amended various recitations of claims 165 and 209 to recite that that they are performed "by a computer." The Applicant submit that these amendments overcome the present rejections.

**The rejection of claim 165 is withdrawn as an apparatus is tied to a non-nominal step.**

Claims 166-170, 183-208, and 218 stand rejected under 35 USC § 101 because the Office states that they depend from either claim 165 or 209, yet do not cure the deficiencies of their parent claim. Official Action, at 36. The Applicant submits that the present amendments to claims 165 and 209 overcomes the rejections of claims 166-170, 183-208, and 218.

Additionally, the Applicant submits that the recitation of the claims being "computer implemented" is sufficient to make the claims considered statutory subject matter under 35 USC § 101. MPEP 2106 sets forth requirements for examining a claim under 35 USC § 101, and this portion of the MPEP requires

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that the Office must consider a claim as a whole when evaluating it under 35 USC § 101:

Finally, when evaluating the scope of a claim, every limitation in the claim must be considered. USPTO personnel may not dissect a claimed invention into discrete elements and then evaluate the elements in isolation. Instead, the claim as a whole must be considered. See, e.g., *Diamond v. Diehr*, 450 U.S. 175, 188-89, 209 USPQ 1, 9 (1981) ("In determining the eligibility of respondents' claimed process for patent protection under § 101, their claims must be considered as a whole. It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis. This is particularly true in a process claim because a new combination of steps in a process may be patentable even though all the constituents of the combination were well known and in common use before the combination was made.").

(Emphasis added). In view of this requirement to consider the claim as a whole, the Applicant submits that a "computer implemented" claim is necessarily statutory subject matter. In view of these claim amendments and remarks, the Applicant requests that the Office reconsider these rejections.

**Respectfully, a computer implemented method in the preamble does not require an apparatus tied to a non-nominal step. The computer could only be tied to one nominal step and still be a computer implemented method. An example of where a computer is just mentioned once could be claims with a last step stating that all of the above steps are implemented by a computer.**

In addition, the Applicant submits that the ability of embodiments of the invention to allow analysis of a wide range of securities within a single, unified and coherent framework leads to a reduction in the physical computing resources required to analyze these securities.

Refer instant specification [0001-0004, 0012-0013, 0027, and 0203]. As described in the specification separate financial models and databases are typically used by practitioners to evaluate the option securities, [FIG. 1 ], the debt securities [FIG. 2] and the equity securities [FIG. 3] of a firm. Embodiments of the Applicant's invention enable all of these securities to be evaluated within only one model and with less databases, as illustrated at [FIG. 4], which illustration shows a reduction in the data input and modelling requirements by comparison to the collective resources required for [FIG. 1 ], [FIG 2.] and [FIG. 3]. Embodiments of the Applicant's invention thus leads to real and tangible savings in the physical computing resources required to analyze such a range of security types.

**Respectfully, the claims are examined, not the specification. Also, it is unclear regarding the above to the 35 USC §101 rejection.**

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**Applicant argues 35 USC § 112, starting pg. 93 of Remarks:**

Claim Rejections - 35 USC § 112

Claims 165-170, 183-224, 237-278 and 291-326 stand rejected as being rejected under 35 USC § 112, second paragraph, because the Office states that they are indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Official Action, at 36.

The Office states, "Claim 165, step 1 has "determining a risk premium incorporated in the rate of return ... " where it is indefinite as to how determining a risk premium in a rate of return is accomplished. How do you determine a risk premium in a rate of return? Claims 219 and 273 have the same problem." Official Action, at 36. Applicant has amended these claims to overcome the rejections.

**Respectfully it remains indefinite as to how the risk premium is determined. For example, is the risk premium simply all of the risk above a risk free rate of return, where the risk premium is the difference between a total rate of return and the risk free rate?**

The Office states, "Claim 165, step 2 has "designating that a price risk factor incorporated in the risk premium ... is the volatility of returns" where it is indefinite as to how a price risk factor is designated. Designating is the same as defining, and this step tries to define a solution (risk factor is the same for two or more securities). It is indefinite as to how this is done. It is also indefinite as to how this step of designating relates to the prior step of determining a risk premium and the later step of defining a financial model. Claims 219 and 273 have the same problem." Official Action, at 37. Applicant respectfully submits that this step does not define a solution, but rather is defining or specifying a constraint or rule to be included in the financial model.

**Somehow a price risk factor is designated as volatility, and the price per unit of the risk factor is the same for two or more securities. Respectfully, anyone can designate or define something, whether or not it makes sense. For example, someone could designate a factor of "1" as common to two or more securities.**

The Office states, "Claim 165, step 3 has "defining a financial model representing at least one relationship between the risk premiums... " where it is indefinite as to what financial model is (what is the scope of a financial model), how the model represents a relationship, and what a relationship between the risk premiums involves. Claims 219 and 273 have the same problem." Official Action, at 37. Applicant has amended these claims to overcome the rejections.

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**Respectfully, a model is an abstract concept. As this claim step is not even limited by an apparatus, the model could be something completely arbitrary, in the mind of someone. The claim requires a financial model that represents the above relationships for the risk premium.**

The Office states, "Claim 165, step 4 has "storing the financial model" where it is indefinite as to how a model is stored. This is interpreted to mean some type of equation that represents a model stored in memory. This step simply stores an equation. Claim 219 has the same problem." Official Action, at 37. Applicant has amended these claims to overcome the rejections.

**Respectfully, storing a representation of the financial model is also indefinite as representation could be anything. A name is a representation.**

The Office states, "Claim 169 recites the limitation "the product of the risk exposures" in the calculating a price per unit step. There is insufficient antecedent basis for this limitation in the claim. Claims 223 and 277 have the same problem." Official Action, at 38. Applicant has amended these claims to overcome the rejections.

**Withdrawn.**

The Office states, "Claim 206 recites the limitation "the returns on the firm ... " There is insufficient antecedent basis for this limitation in the claim. Claim 314 has the same problem." Official Action, at 38. Applicant has amended these claims to overcome the rejections. Applicant has also amended claims 204-205, 207, 258-261, 312-313, and 315 to address the same issue.

**Withdrawn.**

The Office states, "Claim 209 and 317 have "specifying values for risk parameters" where it is indefinite as to how the values are specified (e.g. arbitrarily by a person). Further it is indefinite as to why multiple values are specified for multiple risk factors. One risk parameter could have multiple values for example. Claim 263 has a similar problem of receiving specified values." Official Action, at 38. Applicant has amended these claims to overcome the rejections.

**Withdrawn.**

The Office states, "Claims 209 and 317 has "determining a plurality of input parameters" where it is indefinite as to how determining input parameters is accomplished and what the input factors are. A person could determine in their mind what an input parameters is, and it could be anything, not even a number.



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Claim 263 has a similar problem of receiving input parameters, which could be anything." Official Action, at 38. Applicant has amended these claims to overcome the rejections.

**Defining a plurality of input parameters is also indefinite, as this could be anything.**

The Office states, "Claims 209 and 317 have "defining relationships between said input parameters" which is indefinite as anything could be defined as a relationship (e.g. the parameters are integers)." Official Action, at 38. Applicant has amended these claims to overcome the rejections.

**Defining mathematical relationships between the input parameters does not removed the indefiniteness from the claim.**

The Office states, "Claims 209 and 317 have "creating a computer implemented option- theoretic model of the firm" which is indefinite since creating is the same as generating and it is indefinite as to how a model is generated or created. Further, it is indefinite as to what the model involves. There are no limitations as to what the model is so just about any model would could be created and called an option-theoretic model." Official Action, at 38. Applicant has amended these claims to overcome the rejections. Moreover, the Applicant respectfully submits that the general scope of an option-theoretic model is known in the art and is described in the instant specification, as noted above.

**The model is created based on input parameters and mathematical relationships which could be anything. Defining mathematical relationships between input parameters could be anything.**

The Office states, "Claims 209 and 317 have "inputting the input parameters to the model" where it is indefinite as to how input parameters are input into the model. Is the model an equation with variables, and numbers are input into the equation?" Official Action, at 39. Applicant has amended these claims to overcome the rejections.

**Withdrawn.**

The Office states, "Claims 209 and 317 have "estimating one or more risk parameters form the model" where it is indefinite as to how estimating is accomplished by the model." Official Action, at 39. Applicant respectively notes that these claims read "from the model", not "form the model". Applicant has amended these claims to overcome the rejections.

**Withdrawn.**

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The Office states, "Claims 209 and 317 have "solving the model" where it is indefinite as to how the model is solved. Claim 263 has a similar problem." Official Action, at 39. Applicant has amended these claims to overcome the rejections.

**Withdrawn.**

The Office states, "Claims 209 and 317 have "storing the solution" where there is no antecedence for "the solution."" Official Action, at 39. Applicant has amended these claims to overcome the rejections.

**Withdrawn but storing a representation of the solution is indefinite.**

The Office states, "Claim 263 has "when the system is operational" which is indefinite as to when this happens. This is ignored." Official Action, at 39. Applicant has amended these claims to overcome the rejection.

**Withdrawn.**

The Office states, "Claim 263 has "when executed on a processor" where antecedence is provided for a processor. This should be "when executed by the processor."" Official Action, at 39. Applicant has amended these claims to overcome the rejections.

**Withdrawn.**

The Office states, "Claim 263 has "estimating one or more risk parameters ...from said option-theoretic model..." where it is indefinite as to how the model estimates." Official Action, at 39. Applicant has amended these claims to overcome the rejections.

**Withdrawn.**

The Office states, "Claim 263 has "defining an option-theoretic model of a firm" where defining a model is indefinite since any model could be defined as an option-theoretic model." Official Action, at 39. Applicant has amended these claims to overcome the rejections. Moreover, the Applicant respectfully submits that the general scope of an option-theoretic model is known in the art and is described in the instant Specification, as noted above.

**Withdrawn.**

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The Office states, "Dependent claims 166-170, 183-208, 210-218, 220-224, 237-262, 264-272, 274-278, 291-316, and 318-326 are rejected because they depend from their respective independent claim." Official Action, at 39. Applicant submits that present amendments and remarks regarding the respective parent claims overcomes the present rejections under 35 USC § 112, second paragraph, and requests that the Office reconsider these rejections.

**The rejection to the dependent claims remains until the independent claims are no longer indefinite.**

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 209-218 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Note: The following analysis of claims 209-218 is based on the revised PTO guidelines for patent eligible subject matter under 35 USC 101 after the Supreme Court ruling in *Bilski v. Kappos*, (June 28, 2010). *Interim Guidance for Determining Subject Matter Eligibility for Process Claims in View of Bilski v. Kappos*. This guidelines emphasizes that M-O-T is not the sole test but that further analysis (if M-O-T fails) must be carried out to determine whether the claimed process is an abstract idea.

In the instant case, process claim 209 is not eligible as statutory process under the Interim Guidance. The Supreme Court has ruled that the Machine or

Transformation test articulated below is a useful starting point for determining whether a claimed invention is a patent-eligible process:

the process claim is statutory if it (1) is tied to a machine or (2) creates or involves a composition of matter or manufacture.

**However, absent M-O-T, a claimed method is nonetheless patent-eligible if it is NOT directed to an abstract idea.**

Furthermore, the PTO guidance also states that a claim reciting involvement of machine (e.g. a computer) nominally, insignificantly or tangentially related to the performance of the steps, e.g. data gathering or post-solution activity do not meet the machine prong of the test.

In *Comiskey* (In re *Comiskey*) "the mere use of the machine to collect data necessary for application of the mental process may not make the claim patentable subject matter." *Comiskey*, 499 F.3d at 1380 (citing *In re Grams*, 888 F.2d 835,839-40 (Fed. Cir. 1989)). In other words, nominal or token recitations of structure in a method claim should not convert an otherwise ineligible claim into an eligible one. See *Diehr*, 450 U.S. at 191-92 ("insignificant post- solution activity will not transform an unpatentable principle into a patentable process).

In the case of claim 209 of the instant application, steps (1), (5), (6), and (9) of are treated as insignificant in 101 analysis since these steps are receiving, inputting, and storing a result even if such process is carried out via a machine. On the other hand steps (2)-(4), (7) and (8) of claim 209 may be performed by a human mind yielding subjective and unpredictable result and therefore directed to an abstract idea.

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6. Dependent claims 210-218 do not resolve the deficiency of independent claim 209 and accordingly stand rejected under 35 USC 101 based on the same rationale.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 165-170, 183-224, 237-278, and 291-326 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 165, step 1 has “determining, by a computer, a risk premium, above a risk free rate of return, incorporated in the rate of return...” where it is indefinite as to how determining a risk premium in a rate of return by a computer is accomplished. How do you determine a risk premium in a rate of return? For example, prime rate is a return above a risk free rate. This claim element reads on any rate above risk free. Claims 219 and 273 have the same problem.

10. Claim 165, step 2 has “designating that a price risk factor incorporated in the risk premium...is the volatility of returns” where it is indefinite as to how a price risk factor is designated. Designating is the same as defining, and this step tries to define a solution (risk factor is the same for two or more securities). It is indefinite as to how this is done (e.g. how is it possible to designate something that needs to be solved first?). It is also indefinite as to how this step of designating relates to the prior step of determining a risk

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premium and the later step of defining a financial model. For example, anyone could designate that two securities have the same risk factor whether such designation makes sense or not. Claims 219 and 273 have the same problem.

11. Claim 165, step 3 has “defining a financial model that represents the above relationships for the risk premium...” where it is indefinite as to: 1) what the financial model is (what is the scope of a financial model); and 2) how the financial model “represents the above relationships for the risk premium determined for each security” when there is no relationships above to model (only a risk premium incorporated in a rate of return). Claims 219 and 273 have the same problem.

12. Claim 165, step 4 has “storing a representation of the financial model” where it is indefinite as to what a representation of a financial model encompasses. This is interpreted to mean some type of set of equations that represents a model stored in memory. This step simply stores an equation. Claim 219 has the same problem.

14. Claim 209, step 2 has “defining a plurality of input parameters” where it is indefinite as to how input parameters are defined. It is also indefinite as to whether the parameters relate to the received risk parameters. In general, are not the input parameters already defined by the model and the model is just receiving parameter data?

15. Claim 209 has “defining mathematical relationships between said input parameters” which is indefinite as anything could be defined as a mathematical relationship.

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16. Claim 209 has “creating a computer implemented option-theoretic model of the firm, based on the input parameters and the mathematical relationships ” which is indefinite since creating is the same as generating and it is indefinite as to how a model is generated or created. Further, it is indefinite as to what the model involves. Also both input parameters and mathematical relationships are themselves indefinite. There are no limitations as to what the model is so just about any model would could be created and called an option-theoretic model. Also, is a model really created each time input parameters and mathematical relationships are defined?

17. Claim 209, step 7 has “running the model to produce an estimated value...” where running is indefinite. This is interpreted a calculating or determining by a computer using the model. Claims 263 and 317 have a similar problem.

18. Claims 209 has “solving the model...the solution comprising an estimate for the value of each of the input parameters that the use allows to vary from the received value...” where it is indefinite as to how the solution comprising an estimate is different from the prior step of running the model to produce an estimated value. Claims 263 and 317 have a similar problem.

19. Claim 209, step 9 has “storing a representation of the solution...” where representation is indefinite. This is interpreted as storing a estimated (solution) value. Claims 263 and 317 have a similar problem.

20. Claim 263, steps 1 and 2 have receiving a value for one or more risk parameters and receiving a value for a plurality of input parameters to the option-theorteic model where it is indefinite as to whether the two inputs are different since there is no

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antecedence for the second value (e.g. both receiving steps receive “a value”). Claim 317 has a similar problem.

21. Claim 263 has “receiving instructions on mathematical relationships between said input parameters” where it is indefinite as to what is being received (i.e. what is meant by instructions on mathematical relationships) and what the relationships between the input parameters are comprised of. For example, are these equations? ”). Claim 317 has a similar problem.

22. Dependent claims 166-170, 183-208, 210-218, 220-224, 237-262, 264-272, 274-278, 291-316, and 318-326 are rejected because they depend from their respective independent claim.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KENNETH BARTLEY whose telephone number is (571)272-5230. The examiner can normally be reached on Mon-Fri; 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jagdish Patel can be reached on (571) 272-6748. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/JAGDISH N PATEL/

Primary Examiner, Art Unit 3693